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(54) Discharge lamp assembly

Entladungslampenanordnung

Assemblage de lampe à décharge

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EP-A- 0 580 013
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- **PATENT ABSTRACTS OF JAPAN vol. 18, no. 290 (E-1557) 2 June 1994 & JP-A-06 060 802**

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Description

BACKGROUND OF THE INVENTION

The present invention relates to a discharge lamp assembly, in particular, relates to a base structure of the lamp assembly of a discharge lamp for feeding electric power to the lamp. The present invention relates to such a base structure in which a discharge lamp in which a base is mounted operates with higher than 20000 volts with no leakage due to undesirable discharge in air and along the base structure itself. The present lamp assembly is preferably used in a head lamp of a vehicle. Preferably, a discharge lamp having the present base structure is compatible with a conventional type socket which is used in a conventional filament type lamp in a head light assembly for a vehicle.

A filament type lamp using tungsten filament has been used for a head light lamp in a vehicle.

Lately, a so-called projector type or ellipsoid head light using a halogen lamp (for instance, an iodine lamp) which has advantages to prevent a lamp wall blackened by halogen cycle and to have long life of a filament has been used in a head light of a vehicle. The lamp is almost a point light source, which is accompanied by a reflector for condensing light.

A technical standard has been determined for such a projector type nead light. Some of them are PE (Polyellipsoid), and DE (three-dimentional ellipsoid), in which structure and dimension of a base or a connector are defined for each halogen lamp (H-1 type, or H-7 type, HB-3 type and/or HB-4 type, et al).

A prior halogen lamp for a projector type head light is supplied with electric power of 12 volts, consumes 50-100 watts, having the light conversion efficiency 20-23 lm/W, and average life time 500 hours.

Fig.8 shows the structure of a prior halogen lamp assembly 100 (H-1 type), and a socket 8 of a projector type head light for accepting said lamp assembly 100.

In the figure, the lamp assembly 100 has a halogen lamp 1, which is fixed to a base 2 through a column 3. The numeral 4 is a flange for fixing the lamp assembly 100 to the socket 8, and 5 is an electrode for feeding electric power to the lamp 1. The halogen lamp 1 operates with low voltage around 12 volts, therefore, no specific consideration for insulation is necessary. The base 2 of the lamp 1 has a column 3 made of plastics, and a flange 4 made of conductive material which doubles as a negative electrode.

A socket assembly 7 has a socket 8 which has a conductive bottom plate 8a. The bottom plate 8a has a hole 9 to which the lamp 1 and the column 3 pass, and a pair of small holes (9a, 9b) for accepting projections (4a, 4b on the flange 4 of said lamp assembly 100 so that the lamp assembly 100 is positioned. The lamp assembly 100 is fixed or positioned on the bottom plate 8a, so that the flange 4 contacts with the bottom plate 8a. And a pair of springs 11 push the flange 4 so that the lamp assembly 100 is fixed on the bottom plate 8a. A hook 12 is engaged with the end of the springs 11 so that the lamp assembly 100 is tightly fixed or supported on the bottom plate 8a.

On the other hand, a discharge lamp which replaces a prior halogen lamp is studied for a head light of a vehicle.

A discharge lamp has higher light conversion efficiency up to 100 lm/W, and provides brightness several times as high as a conventional halogen lamp. Further, consumed power is only 35 W or so, and life time is more than four times as long as a halogen lamp. Therefore, a discharge lamp saves much energy, and it is an ideal lamp for a head lamp of a vehicle.

A discharge lamp for a vehicle is commercially available in the tradename XENARC by OSRAM in Germany. Philips Company in Holland also supplies such a discharge lamp in the tradename MICRO POWER LIGHT.

However, as a discharge lamp must use high voltage around 20000 volts, structure for insulation must be considered when it is used as a head light of a vehicle. The structure of a base of a discharge lamp must satisfy the requested specification for insulation.

Conventionally, a base for a discharge lamp for a vehicle is designed in specific size so that spacing between electrodes and length between a positive electrode and an outside ground withstand high voltage higher than 20000 volts.

However, said conventional base structure for a discharge lamp is different in structure and size from those of a conventional filament type head lamp, because of insulation problem for high voltage.

Said conventional base structure for a discharge lamp is comprised of a member of ceramics and a member of metal, or a member of plastics and a member of metal, and has relatively large volume so that leakage and/or discharge due to high voltage, and/or high temperature of a lamp are avoided.

Therefore, it has been impossible to mount a discharge lamp assembly into a conventional socket for a filament type head light. When we use a discharge lamp as a head light for a vehicle, we must develop not only a socket for accepting a discharge lamp, but also a peripheral components which match with the socket.

However, the use of a specific large socket for a discharge lamp, together with peripheral components has the disadvantage of cost for developing some components, and it takes some time for developing, resulting delay of use of a discharge lamp as a head light.

From EP-A-0 580 013 is known a lamp base for a discharge lamp to be used as head light lamp in a car. The lamp base comprises a UV and temperature resistant ceramic top mounted on a plastic socket comprising two parts detachably assembled together with latches.

SUMMARY OF THE INVENTION

It is an object, therefore, of the present invention to overcome the disadvantages and limitations of a prior discharge lamp assembly by providing a new and improved discharge lamp assembly.

It is also an object of the present invention to provide a discharge lamp assembly which is compatible with a conventional filament type lamp, and is engaged with a socket for a conventional filament type lamp.

It is also an object of the present invention to provide a discharge lamp assembly so that a discharge lamp is used in a conventional socket for H-1, H-7, HB-3/HB-4 halogen lamp.

The above and other objects are attained by a discharge lamp assembly having a discharge lamp and a base structure for fixing said discharge lamp, said base structure comprising; a first base component made of integral ceramics comprising a cylindrical tube having a predetermined height at center of said first base component for accepting said discharge lamp at one side of the first base component , a first hole at the bottom of the other side of said first base component for accepting an external positive lead line, a second hole under said cylindrical tube for accepting a positive lead line of said discharge lamp, a third hole for accepting a negative lead line of a discharge lamp , a first partition wall provided between said second hole and said third hole for insulating the positive line and said negative lead line, and a slit between said second hole and said third hole adjacent to a side of said first partition wall ; a second base component made of integral plastics for engaging with said first base component, comprising a circular flange and a housing under said flange, said housing having a bottom plate for accepting said first base component, a pair of tubes under said bottom plate for accepting external lead lines for said discharge lamp, and a second partition wall for insulating said positive lead line and said negative lead line so said said second partition wall engages with said slit ; wherein the length between said positive lead line and outer wall of the base structure, and the length between said positive lead line and said negative lead line are in the range between 20 mm and 30 mm, and said base structure is compatible with a conventional filament type head light.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, features, and attendant advantages of the present invention will be appreciated as the same become better understood by means of the following description and accompanying drawings wherein;

Fig.1 shows structure of a discharge lamp assembly which is compatible with a socket for a conventional H-1 type halogen lamp for a filament type head light,
Fig.2 shows cross section along A-A' of Fig.1,
Fig.3 shows modification of the structure of Fig.1,
Fig.4 shows a perspective view of the present discharge lamp assembly mounted in a conventional socket for a H-1 filament type halogen lamp,
Fig.5 shows structure of a base for a discharge lamp assembly which is compatible with HB-3 and/or HB-4 type halogen lamp for a filament type head light,
Fig.6 shows structure of a first base component of the base structure of Fig.5,
Fig.7 shows cross section of a base structure of Fig. 5, and
Fig.8 shows a partial perspective view of a prior halogen lamp, and a prior socket of H-1 filament type halogen lamp.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig.1 shows a perspective view of a discharge lamp assembly which has a base structure compatible with a socket for a H-1 filament type halogen lamp.

Fig.2 shows cross section along A-A' viewing from direction B.

The discharge lamp assembly 200 in Figs.1 and 2 comprises an elongated discharge lamp 15 having a positive lead line 20 and a negative lead line 17, a first base component 22 which supports said lamp 15, and a second base component 30 which engages with said first base component 22.

The first base component 22 and the second base component 30 compose the base structure 14. The hole 22a is at the bottom of the first base component 22 and does not pass through the first base component 22. The holes 22b and 22c pass through the same.

The first base component 22 is made of ceramics, and essentially in rectangular shape with bulk structure having a short cylindrical tube 16 having a predetermined height (b) at the center of the first base component 22. A hole 16a having a depth (a) is provided under said cylindrical tube 16. The diameter of the hole 16a is the same as the inner diameter of the cylindrical tube 16. The first base component 22 has a relatively large first hole 22a which accepts an external positive lead line 26 at the bottom of the first base component 22 at one side of the base component 22, a relatively thin second hole 22b which passes through the component 22 from top to bottom for accepting the positive lead line 20 at center of the base component 22, a relatively thin third hole 22c which passes through the component 22 from top to bottom for accepting a negative lead line 17 at the other side of the base component 22, and a rectangular slit 22d which engages with an insulation wall 29 of a second base component 30 (as described later).

The first hole 22a is defined by an external wall 23a which extends the whole length or height of the component 22, and an inner wall 23b which is shorter than the external wall 23a so that an empty space is provided under the inner wall 23b. That empty space is used to

couple the positive lead line 20 with the external lead line 26.

The third hole 22c has a relatively large portion 19 at the top of the component 22 so that a thin ceramics pipe 18 which encloses a negative lead line 17 is engaged, and another relatively large portion at the bottom of the component 22 so that an external negative lead line 27 is accepted. The portion between those relatively large portions is thin only for accepting a negative lead line 17.

The slit 22d is provided at the bottom of the first base component 22 between the second hole 22b at the center and the third hole 22c, and is defined by the walls around said holes 22b and 22c. One wall 23c at the side of the slit 22d toward the second hole 22b extends the whole length of the first component 22, and functions as a first partition wall 21, which operates to increase insulation length between the positive lead line and the negative lead line.

The second base component 30 is made of integral plastics having an arc shaped flange 24 and an essentially rectangular hollow housing 24b which engages with said first base component 22.

The flange 24 has a pair of small projections 34a and 34b which engage with holes 9a and 9b (see Fig.8) of a conventional filament type socket for positioning the lamp assembly in the socket. The projections 34a and 34b locate separately at both sides of the housing 24b.

The rectangular hole defined by the housing 24b is separated by a second partition wall 29 which is integral with the second base component 30. The second partition wall 29 is engaged with the slit 22d of the first base component 22 when two base components 22 and 30 are assembled. The first partition wall 21 and the second partition wall 29 touch with each other when assembled as shown in Fig.2.

The second base component 30 has a pair of pipes 28a and 28b under a bottom plate of the second base component 30 integral with the component 30 for accepting external lead lines 26 and 27. Those pipes 28a and 28b are located under the holes 22a and 22c, respectively.

The diameter of the flange 24 is around 24 mm, and the flange 24 has the cutout portion K for the compatibility with a conventional H-1 filament lamp. The housing 24b has also a cutout portion relating to that of the flange 24.

In assembling, the lamp 15 is engaged with the cylinder 16 of the first base component 22. The positive lead line 20 passes through the second hole 22b at the center of the first base component 22, and the negative lead line 17 passes through the third hole 22c at the side of the first base component 22. Preferably, the negative lead line 17 is covered with the ceramics pipe 18 between the first base component 22 and the top of the lamp 15.

The external lead lines 26 and 27 are engaged with the pipes 28a and 28b, respectively, of the second base component 30. Then, the end of the positive lead line 20 is spot-welded to the top 26a of the external positive lead line 26, and the end of the negative lead line 17 is spot-welded to the end 27a of the external negative lead line 27.

Then, the second base component 30 is engaged with the first base component 22 so that the first base component 22 is inserted in the hole of the second base component 30.

Preferably, the transparent insulation tube 32 made of glass covers the discharge lamp 15 for the whole length of the lamp 15 and is engaged with said cylindrical tube 16 of the first base component 22.

In the above structure, the insulation length X1 from the bare portion of the positive lead line 20 or the positive external lead line 26 exposing conductive metal to an external point of the base structure, and the length X2 from the positive lead line 20 to the negative lead line 17 are designed so that both X1 and X2 are in the range between 20 mm and 30 mm for providing withstand voltage higher than 20000 V. In Fig.2, the insulation length X1 from the positive lead line 20 to the external point E_6 is;

$$X1 = a + 2b + c$$

The insulation length X1 is between E_1 and E_6(or E_5), and (a) is the depth of the hole 16a or the length between E_2 (bottom of the hole 16a) and E_5 (bottom of the cylindrical tube 16), (b) is the height of the cylindrical tube 16 or the length between E_4 and E_5, and (c) is the radius of the tube 16 or the glass tube 32, or the length between E_1 (center of the hole 22b) and E_6 (or E_5). The base structure is connected to the ground potential at the point close to the point E_6 through springs 11 of a socket.

It should be appreciated that the insulation length X1 may be enough for desired withstand voltage by designing the height of the cylindrical tube 16 of the first base component 22.

In one modification of the present invention, the discharge lamp 15 is covered with a transparent glass tube 32 which engages with said cylindrical tube 16. The presence of the tube 32 increases the insulation length X1.

The point E_1 is defined to be the bottom center of the hole 16a, the point E_2 is defined to be the peripheral of the bottom of the hole 16a, the points E_3 and E_4 are top of the cylindrical tube 16, the point E_5 is the outer point at the bottom of the cylindrical tube 16, and the point E_6 is the bottom of the glass tube 32. When no glass tube 32 is provided, the point E_5 coincides with the point E_6 when we consider the insulation length X1.

The insulation length X2 between the positive lead line 20 and the negative lead line 17 is the total length from the point G_1 to the point G_7 through G_2 through G_6 as shown by dotted line in Fig.2, and is almost twice of

the height (d) of the first partition wall 21 or the second partition wall 29. Therefore, it should be appreciated that the insulation length X2 is increased by the presence of the first partition wall 21 and the second partition wall 29.

The point G_1 is defined to be the bottom of the hole 22b, the points G_2 and G_3 are bottom of the first partition wall, the points G_4 and G_5 are top of the second partition wall, the point G_6 is the peripheral of a large hole under the thin hole 22c, and the point G_7 is the bottom center of the thin hole 22c.

In the present invention, both the insulation length X1 and the insulation length X2 are in the range between 20 mm and 30 mm, the first base component 22 is made of densed steatite ceramics having the main crystallization ($MgO.SiO_2$) which is conventionally used for insulation material for high frequency signal, and the second base component 30 is made of plastics which is superior for insulation.

Therefore, the present base structure has the withstand voltage higher than 20000 volts, and a discharge lamp is used with voltage higher than 20000 volts.

Further, it should be appreciated that the base structure 14 is designed in structure and size so that it is compatible with a socket for a conventional filament type lamp.

The shape of the circular flange 24 with the cut out portion K with a pair of projections 34a and 34b is determined so that a lamp is compatible with a socket for a conventional H-1 filament type lamp (see Fig.8).

Fig.4 shows a perspective view of a lamp assembly in which a discharge lamp having the present base structure is coupled with a conventional H-1 filament type head light. In the figure, the numeral 7 is a socket assembly, 7a is a front lens, 7b is a lamp body, 8 is a socket, 14 is the present base structure of Figs.I and 2, 11 is a spring for fixing the lamp assembly to the socket 8. The numerals 26 and 27 are external lead lines of a discharge lamp. The spring 11 in Fig.4 is the same as that of Fig.8. It should be appreciated that a discharge lamp 15 of the lamp assembly is behind the socket 8, and it is not shown in Fig.4.

As mentioned above, the present discharge lamp assembly is compatible with a conventional filament type lamp, and is used in a conventional socket assembly.

Fig.3 shows the modification of the discharge lamp assembly of Figs. 1 and 2. The feature of Fig.3 is the presence of an insulation tube 18a which is preferably transparent, and covers the positive lead line 20 in the discharge lamp 15. The tube 18a is coupled with the bottom of the cylindrical tube 16 or the point E_1. The presence of the tube 18a increases the insulation length X1, because the insulation length E_1E_2 is converted to the length from E_1 to the top of the tube 18a, plus the length from the top of the tube 18a to E_2. Preferably, the height of the tube 18a is longer than the height of the cylindrical tube 16.

Fig.5 shows a perspective view of a base structure of a discharge lamp assembly in the second embodiment of the present invention. It is compatible with HB-3 or HB-4 filament type lamp system.

Fig.6 shows the bottom view and the side view of the first base component 22 of Fig.5.

Fig.7 is a cross section along B-B' viewing from the arrow C in Fig.3.

In those figures, the same numerals as those in Figs.1 and 2 show the same members.

The base structure 40 for a head light for a vehicle has a first base component 22, and a second base component 30.

The first base component 22 is made of ceramics essentially in circular cylindrical shape, and has a cylindrical tube 16 for accepting a discharge lamp 15 at the center of the first base component 22. The holes 22a, 22b and 22c are provided similar to the structure of Figs. 1-3. The hole 22b is provided under the cylindrical tube 16 and accepts a positive lead line 20 of the discharge lamp 15. The hole 22c has a cylindrical wide portion 19 at the top of the same for accepting and fixing a thin ceramics tube 18 which covers a negative lead line 17. The first base component 22 has a first partition wall 21 at a side of the center hole 22b for separating and insulating between a positive lead line 20 of a discharge lamp and a negative lead line 17 in the ceramics tube 18.

The second base component 30 is made of plastics so that it engages with the first base component 22, and has a circular flange 24. The second base component 30 has a second partition wall 29 for separating and insulating between a positive lead line 20 of a discharge lamp and a negative lead line 17 (and an external negative lead line 27). The second partition wall 29 contacts with the first partition wall 21 when two base components are assembled. The second base component 30 has cylindrical tubes 28a and 28b for accepting an external positive lead line 26 and an external negative lead line 27. The second base component 30 engages with the first base component 22 so that the latter is inserted into the former. The diameter of the flange 24 is 30 mm in the embodiment.

As shown in the figures, the first base component 22 and the second base component 30 have a pair of coaxial outer walls. The first partition wall 21 and the second partition wall 29 contact with each other.

The partition walls 21 and 29, operates, together with a pair of coaxial outer walls, to increase the insulation length X2 between the negative lead line 17 and the positive lead line 20.

The height (b) of the cylindrical tube 16 which accepts a discharge lamp 15 operates to increase the insulation length X1 between E and J in Fig.7. Therefore, the insulation length X1 is designed so that the desired withstand voltage is obtained by properly designing the height (b).

Further, an insulation glass tube 32 covering a discharge lamp 15, accepted in the cylindrical tube 16, increases the insulation length X1, as is the case of the

first embodiment of Figs. 1-2.

Further, a glass tube 18a covering the positive lead line 20 as is the case of Fig.3 increases the insulation length X1.

Therefore, it should be noted that the insulation length X1 depends upon an insulation glass tube 32, and the height (b) of a cylindrical tube 16. So, the structure of a base of a discharge lamp is designed considering the insulation length X1, together with other design conditions, including the size of the first base component 22, the strength and the shape of ceramics, whether the insulation glass tube 32 is used or not, et al.

The discharge lamp assembly having the base structure according to the present invention is compatible with a conventional halogen lamp assembly, and has the same length LCL (light center length) between the reference plane S (plane of flange) of the base structure and the center of light as that of a conventional halogen lamp. The size of the base structure of the present invention satisfies the standard of the conventional technical standard for a conventional halogen lamp, so that the present discharge lamp is compatible with a conventional halogen lamp.

It should be appreciated that the present invention is not restricted to a head light for a vehicle, but is used in any discharge lamp.

As described above in detail, the present invention has at least the following effects.

(1) It is small in size, and has sufficient insulation characteristics having withstand voltage higher than 20000 volts for operating a discharge lamp.
(2) The present discharge lamp is compatible with a conventional filament type head light, and is inserted in a socket for a conventional lamp.

From the foregoing it should be appreciated that a new and improved discharge lamp assembly has been found. It should be understood of course that the embodiments disclosed are merely illustrative and are not intended to limit the scope of the invention. Reference should be made, therefore, to the appended claims for indicating the scope of the invention.

Claims

1. A discharge lamp assembly having a discharge lamp (15) and a base structure (14, 40) for fixing said discharge lamp, said base structure comprising;

   a first base component (22) made of integral ceramics comprising a cylindrical tube (16) having a predetermined height (b) at center of said first base component for accepting said discharge lamp (15) at one side of the first base component (22), a first hole (22a) at the bottom of the other side of said first base component (22) for accepting an external positive lead line (26), a second hole (22b) under said cylindrical tube (16) for accepting a positive lead line (20) of said discharge lamp (15), a third hole (22c) for accepting a negative lead line (17) of a discharge lamp (15), a first partition wall (21) provided between said second hole and said third hole for insulating the positive line and said negative lead line, and a slit (22d) between said second hole and said third hole adjacent to a side of said first partition wall (21)
   a second base component (30) made of integral plastics for engaging with said first base component (22), comprising a circular flange (24) and a housing (24b) under said flange (24), said housing having a bottom plate for accepting said first base component (22), a pair of tubes (28a, 28b) under said bottom plate for accepting external lead lines for said discharge lamp, and a second partition wall (29) for insulating said positive lead line and said negative lead line so said said second partition wall (29) engages with said slit (22d),

   wherein the length (X1, X2) between said positive lead line and outer wall of the base structure, and the length between said positive lead line and said negative lead line are in the range between 20 mm and 30 mm, and said base structure is compatible with a conventional filament type head light.

2. A discharge lamp assembly according to claim 1, further comprising a hollow tube (32) made of transparent glass covering said discharge lamp (15) so that said tube (32) is inserted into said cylindrical tube (16).

3. A discharge lamp assembly according to claim 1, wherein said discharge lamp is for a head light for a vehicle.

4. A discharge lamp assembly according to claim 1, wherein said length (X1, X2) is enough for providing withstanding voltage up to 22000 volts.

5. a discharge lamp assembly according to claim 1, further comprising a transparent glass tube (18a) covering said positive lead line (20) within said discharge lamp (15).

6. A discharge lamp assembly according to claim 1, wherein the lamp assembly is compatible with H-1 type conventional lamp.

7. A discharge lamp assembly according to claim 1, wherein the lamp assembly is compatible with HB-3/HB-4 type conventional lamp.

8. A discharge lamp assembly according to claim 1, wherein said flange (24) has a pair of projections (34a, 34b) which engages with holes of a socket for positioning of the lamp assembly.

9. A discharge lamp assembly according to claim 1, wherein said negative lead line (17) is covered with a thin ceramics tube (18) between top of said discharge lamp and said first base component.

10. A discharge lamp lamp assembly according to claim 1, wherein hole (16a) is provided in said first base component (22) under said cylindrical tube (16), and said discharge lamp (15) is positioned at the bottom of the hole (16a).

Patentansprüche

1. Entladungslampenanordnung mit einer Entladungslampe (15) und einem Sockelaufbau (14, 40) zur Befestigung der Entladungslampe, wobei der Sockelaufbau aufweist:

   ein erstes Sockelbauteil (22) aus einstückiger Keramik, mit einem zylindrischen Rohr (16), das eine vorbestimmte Höhe (b) hat, in der Mitte des ersten Sockelbauteils zur Aufnahme der Entladungslampe (15) auf der einen Seite des ersten Sockelbauteils (22), einem ersten Loch (22a) im Boden der anderen Seite des ersten Sockelbauteils (22) zur Aufnahme einer äußeren positiven Zuleitung (26), einem zweiten Loch (22b) unter dem zylindrischen Rohr (16) zur Aufnahme einer positiven Zuleitung (20) der Entladungslampe (15), einem dritten Loch (22c) zur Aufnahme einer negativen Zuleitung (17) einer Entladungslampe (15), einer ersten Trennwand (21) zwischen dem zweiten Loch und dem dritten Loch zur Isolation der positiven Zuleitung und der negativen Zuleitung und einem Schlitz (22d) zwischen dem zweiten Loch und dem dritten Loch neben der einen Seite der ersten Trennwand (21),
   ein zweites Sockelbauteil (30) aus einstückigem Kunststoff für das in Eingriffbringen mit dem ersten Sockelbauteil (22), mit einem kreisförmigen Flansch (24) und einem Gehäuse (24b) unter dem Flansch (24) des Gehäuses, mit einer Bodenplatte zur Aufnahme des ersten Sockelbauteils (22), zwei Rohren (28a, 28b) unter der Bodenplatte zur Aufnahme äußerer Zuleitungen für die Entladungslampe und einer zweiten Trennwand (29) zur gegenseitigen Isolierung der positiven Zuleitung und der negativen Zuleitung, wobei die zweite Trennwand (29) mit dem Schlitz (22d) in Eingriff kommt, wobei die Länge (X1, X2) zwischen der positiven Zuleitung und der Außenwand des Sockelaufbaus und die Länge zwischen der positiven Zuleitung und der negativen Zuleitung im Bereich zwischen 20 mm und 30 mm liegen und der Sockelaufbau mit einem herkömmlichen Glühfaden-Scheinwerfer kompatibel ist.

2. Entladungslampenanordnung nach Anspruch 1, die ferner ein hohles Rohr (32) aus transparentem Glas aufweist, das die Entladungslampe (15) so abdeckt, daß das Rohr (32) in das zylindrische Rohr (16) eingeführt wird.

3. Entladungslampenanordnung nach Anspruch 1, bei der die Entladungslampe für einen Scheinwerfer eines Fahrzeugs vorgesehen ist.

4. Entladungslampenanordnung nach Anspruch 1, bei der die erwähnte Länge (X1, X2) zur Ausbildung einer Spannungsfestigkeit von bis zu 22.000 V ausreichend ist.

5. Entladungslampenanordnung nach Anspruch 1, mit einem transparenten Glasrohr (18a), das die positive Zuleitung (20) in der Entladungslampe (15) abdeckt.

6. Entladungslampenanordnung nach Anspruch 1, bei der die Lampenanordnung mit der konventionellen H-1-Lampe kompatibel ist.

7. Entladungslampenanordnung nach Anspruch 1, bei der die Lampenanordnung mit einer herkömmlichen Lampe vom Typ HB-3/HB-4 kompatibel ist.

8. Entladungslampenanordnung nach Anspruch 1, bei der der Flansch (24) zwei Vorsprünge (34a, 34b) aufweist, die in Löcher einer Fassung zur Positionierung der Lampenanordnung eingreifen.

9. Entladungslampenanordnung nach Anspruch 1, bei der die negative Zuleitung (17) mit einem dünnen Keramikrohr (18) zwischen dem oberen Ende der Entladungslampe und dem ersten Sockelbauteil abgedeckt ist.

10. Entladungslampenanordnung nach Anspruch 1, bei der ein Loch (16a) in dem ersten Sockelbauteil (22) unter dem zylindrischen Rohr (16) vorgesehen und die Entladungslampe (15) am Boden des Loches (16a) angeordnet ist.

Revendications

1. Montage de lampe à décharge comprenant une lampe à décharge (15) et une structure de culot (14, 40) pour fixer la lampe à décharge, la structure de

culot comprenant:

un premier élément de culot (22) entièrement en céramique comprenant au milieu du premier élément de culot un tube cylindrique (16) d'une hauteur prédéterminée (b) pour recevoir la lampe à décharge (15) d'un côté du premier élément de culot (22), un premier trou (22a) situé au fond de l'autre côté du premier élément de culot (22) pour recevoir un fil d'amenée externe positif (26), un deuxième trou (22b) sous le tube cylindrique (16) pour recevoir un conducteur positif (20) de la lampe à décharge (15), un troisième trou (22c) pour recevoir un conducteur négatif (17) de la lampe à décharge (15), une première paroi de séparation (21) placée entre le deuxième trou et le troisième trou pour isoler le conducteur positif du conducteur négatif, et une fente (22d) entre le deuxième trou et le troisième trou voisine d'un côté de la première paroi de séparation (21),
un second élément de culot (30) entièrement en matière plastique pour recevoir le premier élément de culot (22), comprenant un rebord circulaire (24) et un logement (24b) sous le rebord (24), le logement comprenant une plaque de fond pour recevoir le premier élément de culot (22), une paire de tubes (28a, 28b) sous la plaque de fond pour recevoir les fils d'amenée externes de la lampe à décharge, et une seconde paroi de séparation (29) pour isoler le conducteur positif du conducteur négatif de sorte que la seconde paroi de séparation (29) s'emboîte dans la fente (22d),

dans lequel la longueur (X1, X2) entre le conducteur positif et la paroi externe de la structure de culot, et la longueur entre le conducteur positif et le conducteur négatif sont dans une plage de 20 mm à 30 mm, et dans lequel la structure de culot est compatible avec une ampoule de phare classique de type à filament.

2. Montage de lampe à décharge selon la revendication 1, comprenant en outre un tube creux (32) en verre transparent recouvrant la lampe à décharge (15) de sorte que le tube (32) soit inséré dans le tube cylindrique (16).

3. Montage de lampe à décharge selon la revendication 1, dans lequel la lampe à décharge est prévue comme ampoule de phare de véhicule.

4. Montage de lampe à décharge selon la revendication 1, dans lequel la longueur (X1, X2) est suffisante pour supporter une tension allant jusqu'à 22000 volts.

5. Montage de lampe à décharge selon la revendication 1, comprenant en plus un tube (18a) en verre transparent recouvrant le conducteur positif (20) dans la lampe à décharge (15).

6. Montage de lampe à décharge selon la revendication 1, dans lequel le montage de lampe est compatible avec une lampe classique de type H-1.

7. Montage de lampe à décharge selon la revendication 1, dans lequel le montage de lampe est compatible avec une lampe classique de type HB-3/HB-4.

8. Montage de lampe à décharge selon la revendication 1, dans lequel le rebord (24) comprend une paire de saillies (34a, 34b) qui s'emboîtent dans les trous d'une douille pour positionner le montage de lampe.

9. Montage de lampe à décharge selon la revendication 1, dans lequel le conducteur négatif (17) est recouvert d'un tube fin en céramique (18) entre le sommet de la lampe à décharge et le premier élément de culot.

10. Montage de lampe à décharge selon la revendication 1, dans lequel un trou (16a) est prévu dans le premier élément de culot (22) sous le tube cylindrique (16), et dans lequel la lampe à décharge (15) est positionnée au fond du trou (16a).

Fig. 1

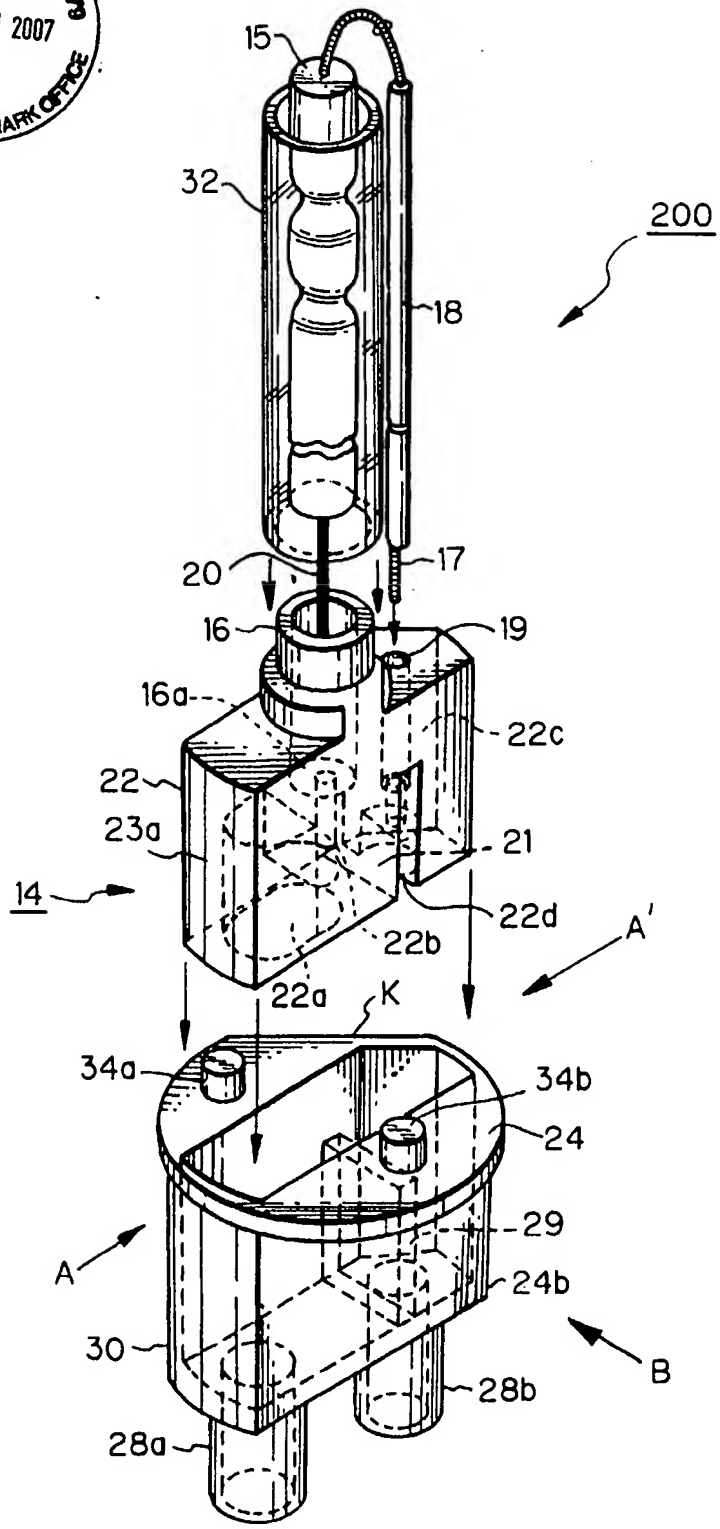

Fig. 2

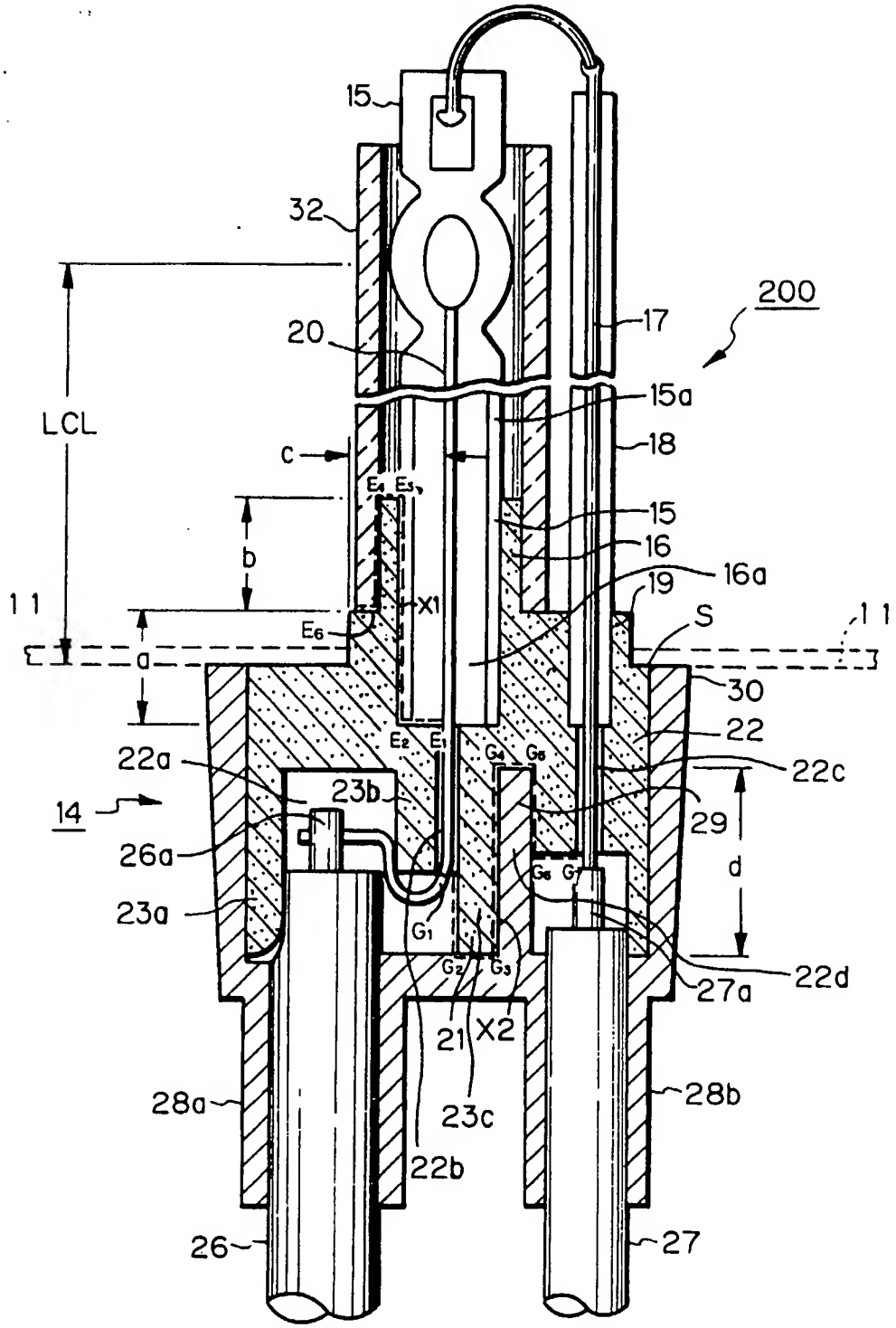
15
32
200
17
20
15a
LCL
18
c
15
16
b
16a
19
11
X1
S
11
E6
a
30
22
E2
E1
G4
G5
22a
22c
23b
14
29
26a
d
G6
G7
23a
G1
G2
G3
22d
27a
21
X2
28a
28b
23c
22b
26
27

Fig. 3

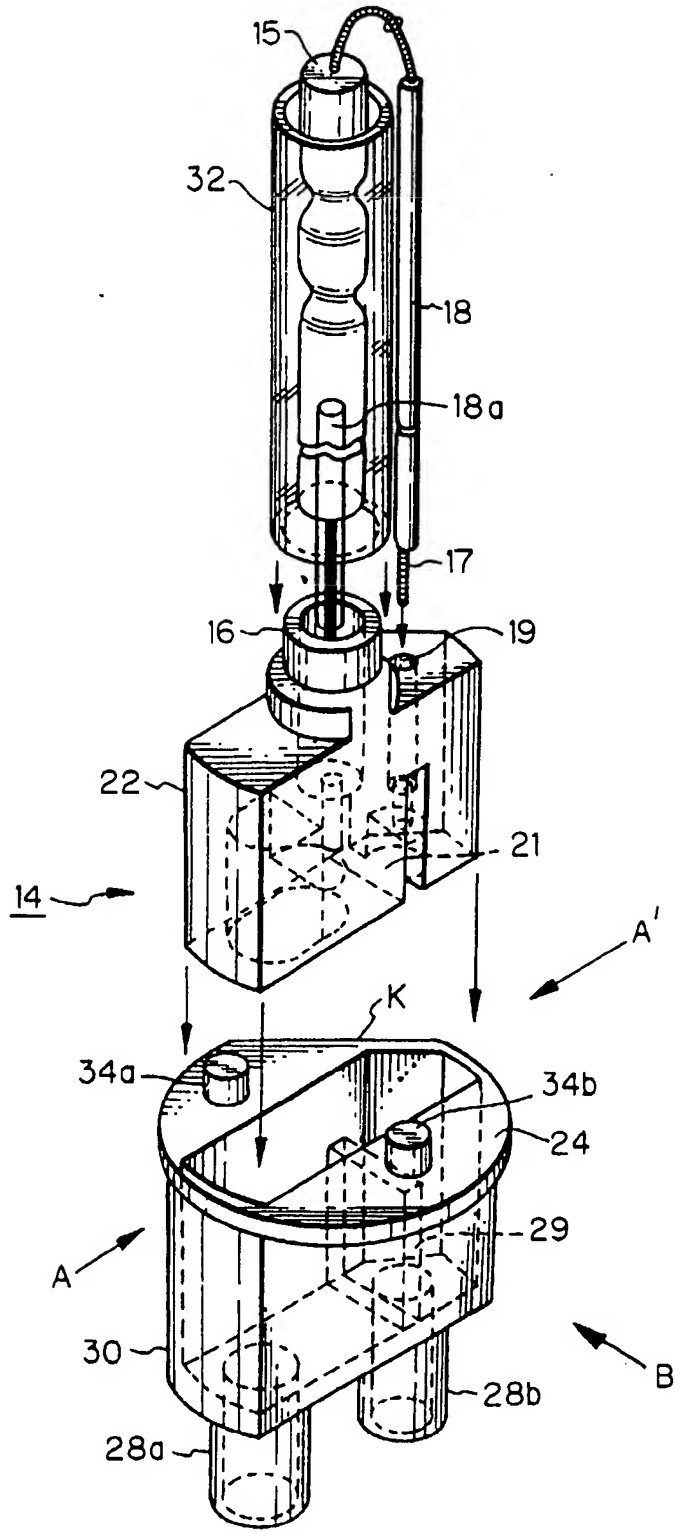

Fig. 4

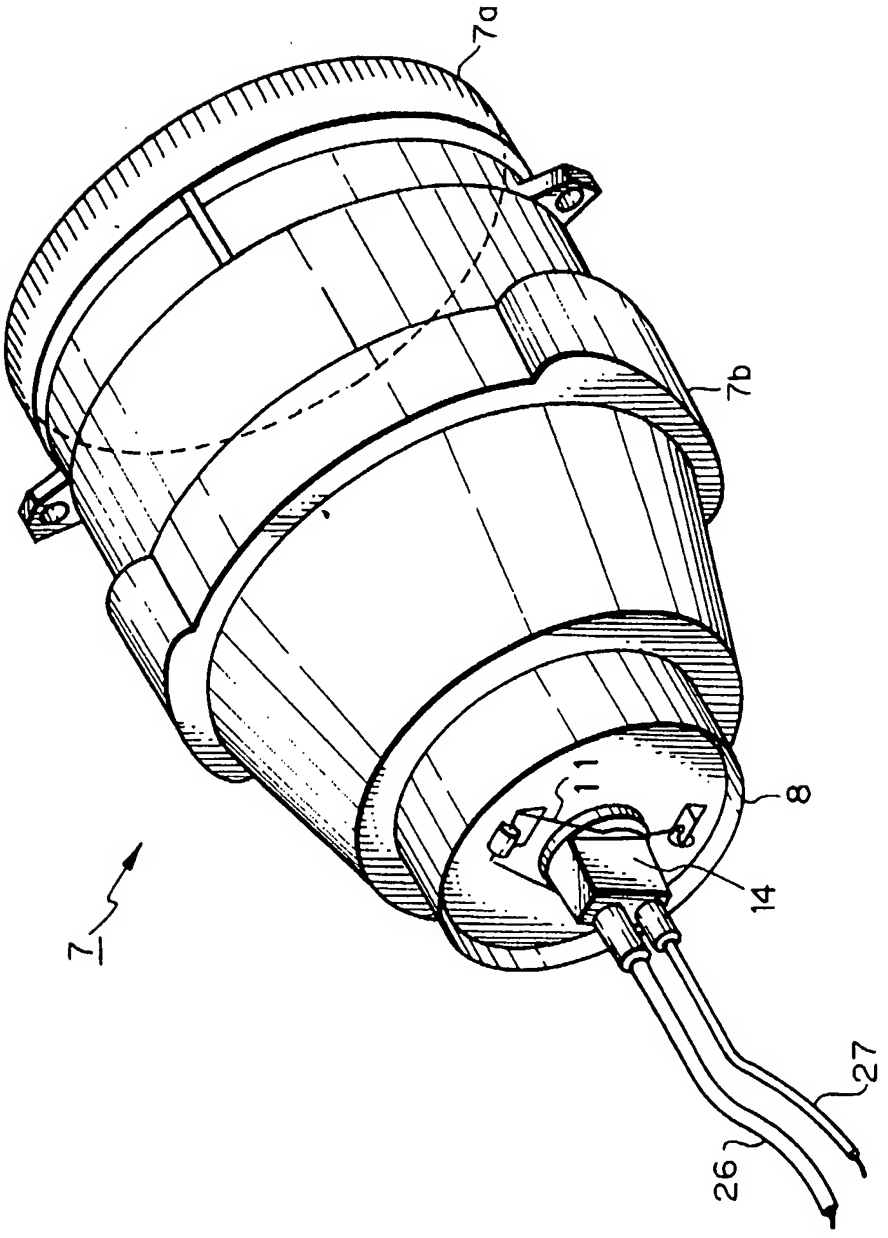

Fig. 5

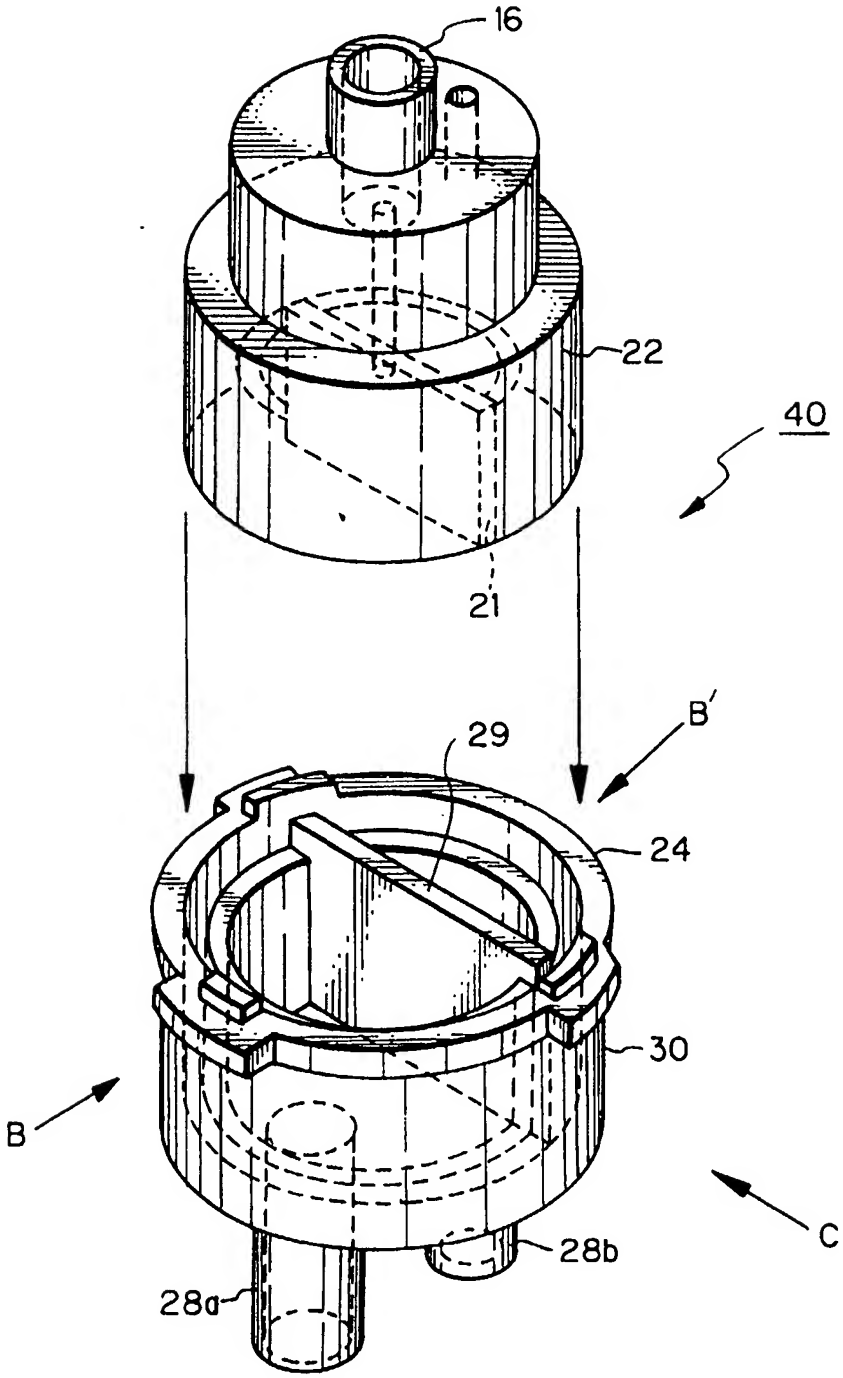

Fig. 6

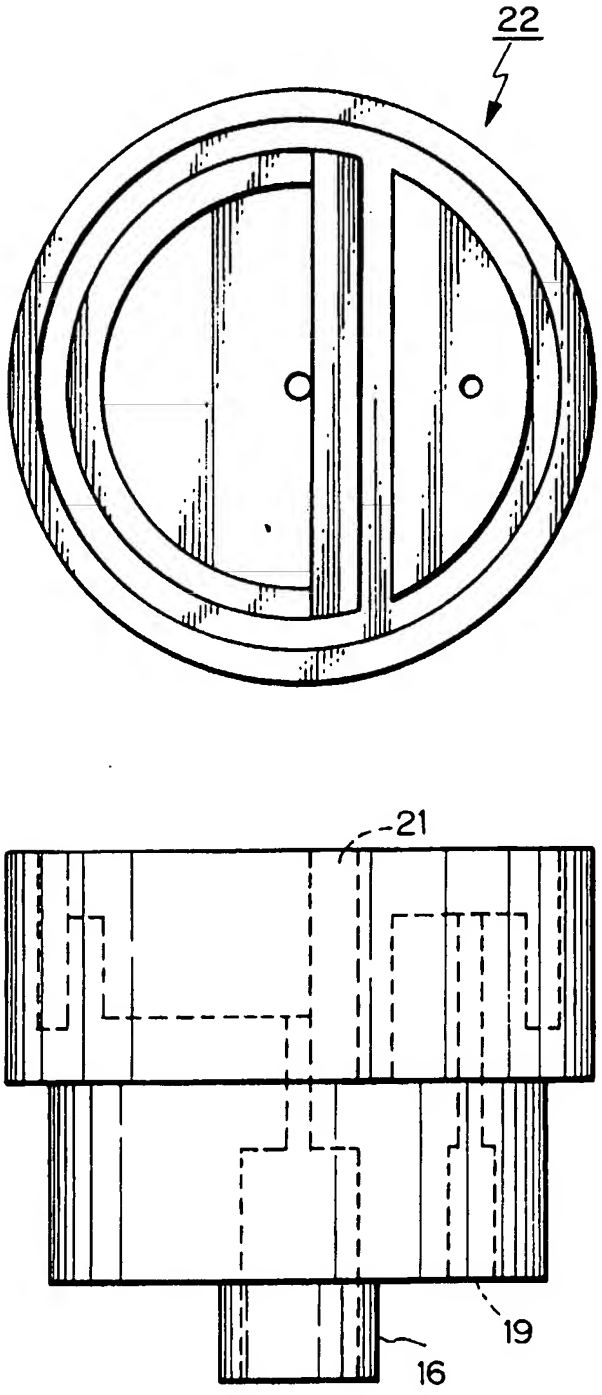

Fig. 7

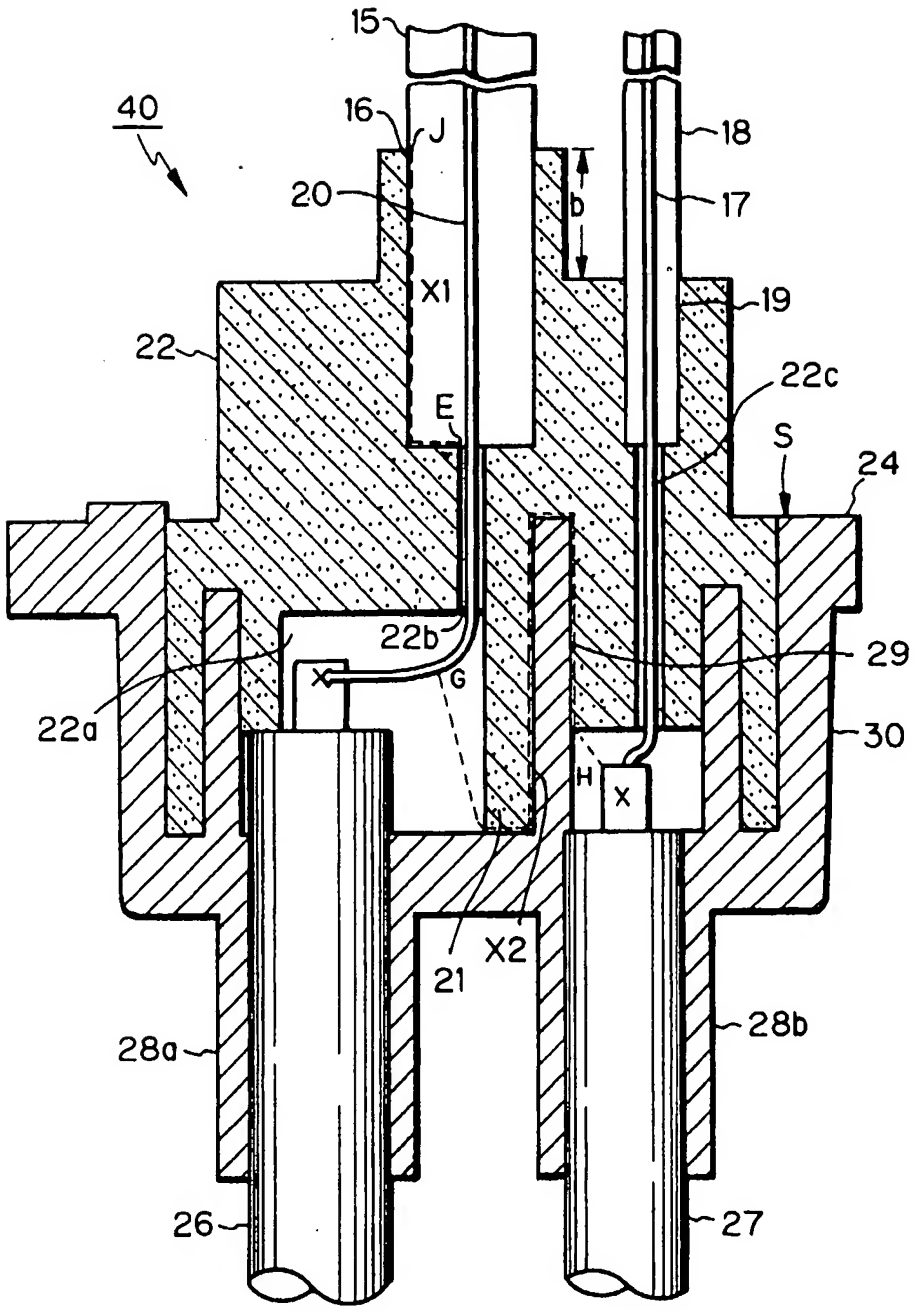
15
40
16
J
18
20
b
17
X1
19
22
22c
E
S
24
22b
29
G
22a
30
H
X
X2
21
28b
28a
26
27

Fig. 8 PRIOR ART